

respectfully traverse the rejection because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Also, MPEP § 2142 states that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. It is respectfully submitted that the Official Action has failed to carry this burden. While the Official Action relies on various teachings of the cited prior art to disclose aspects of the claimed invention and asserts that these aspects could be used together, it is submitted that the Official Action does not adequately set forth why one of skill in the art would combine the references to achieve the present invention.

There is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Chen and Ipri or to combine reference teachings to achieve the claimed invention. Specifically, there is no suggestion or motivation to combine the high pressure oxidation process (5-10 atm) of Chen with the low pressure process (1 atm) of Ipri. Further, there is no

suggestion or motivation to combine the process in Chen, which does not occur in a steam ambient, with the process in Ipri, which occurs in a 100% steam ambient. Still further, there is no suggestion or motivation to combine the process in Chen, where oxidation occurs after crystallization, with the process in Ipri, where oxidation and crystallization are performed simultaneously.

The Official Action asserts that "it would have been obvious to one skilled in the art that the oxidation temperatures of Ipri could have been used in the known method of Chen et al., since these temperatures are below 825°C" and "that the oxidizing atmosphere of Ipri, as well as the temperature range of Ipri, could have been used in the method of Chen et al., since Ipri teaches that a high quality dielectric of a TFT can be formed by the high pressure oxidation performed in steam at temperatures in the range of 580 to 620°C" (pp. 3-4, Paper No. 30). The Applicants respectfully disagree.

Ipri cannot teach that a high quality dielectric of a TFT can be formed by a high pressure oxidation performed in steam at temperatures in the range of 580 to 620°C, because Ipri does not teach or suggest a high pressure oxidation step. The process described in Ipri is carried out "at a pressure of one atmosphere" (col. 2, lines 56-57) or, for example, "in a steam ambient at one atmosphere" (col. 2, line 68-col. 3, line 1). The Applicants respectfully submit that 1 atm is not high pressure; therefore, Ipri does not disclose high pressure oxidation.

Nothing in Ipri or the cited prior art teaches or suggests changing the pressure in Ipri from 1 atm or using the Ipri process with a high pressure process. Specifically, as noted in the interview of March 4, 2002, and the response of March 26, 2002, it was argued that the then-amended independent claims include the feature "oxidizing the crystallized semiconductor film ... at a pressure greater than 1 atmosphere up to 15 atmospheres." Also, in the Official Action of October 21, 2002, and the present Official Action, the Examiner recognizes that Ipri uses a pressure of 1 atm. Therefore, nothing in the prior art teaches or suggests why one with ordinary skill in the art would be motivated to use the the low pressure process (1 atm) of Ipri with the high pressure oxidation process (5-10 atm) of Chen.

Also, the Applicants respectfully submit that the rejection using Chen and Ipri is inappropriate since the claims of the present invention recite that "oxidizing the crystallized semiconductor film ... at a pressure greater than 1 atmosphere up to 15 atmospheres," which, as noted above, is not disclosed by Ipri. Even if, as the Official Action suggests, one were motivated to combine Chen and Ipri because of a similarity of temperature ranges (both Ipri and Chen appear to use an oxidation temperature of less than 825°C), the Applicants respectfully submit that such a reason and combination are inappropriate since the oxidation atmosphere and pressure of Ipri (in a 100% steam ambient, at 1 atm) are different from those of Chen (not in a steam ambient, at 5-10 atm).

Furthermore, Ipri discloses that amorphous silicon (i.e., a-Si) islands are initially deposited on the substrate and then simultaneously performs the oxidation and crystallization (col. 1, lines 60-68; col. 2, lines 1-60; Figs. 1-4). By doing this, the a-Si on the surface of the island is oxidized which does not meet the limitation of the instant independent claims requiring "oxidizing the crystallized semiconductor film" since the oxidation step is performed on the a-Si film. Further, the Official Action has provided no argument or documentation that such oxidation (of crystallized) silicon does inherently take place in the process of Ipri.

Troxell, Wolf I and Wolf II do not cure the deficiencies in Chen and Ipri. The Official Action relies on Troxell, Wolf I and Wolf II to allegedly teach an alkali-free glass substrate (p. 4, Paper No. 30), a pyrogenic oxidation step (p. 5, Id.), and a plasma CVD process (p. 7, Id.). Chen, Ipri, Troxell, Wolf I and Wolf II, either alone or in combination, do not provide a suggestion or motivation to combine the high pressure oxidation process (5-10 atm) of Chen with the low pressure process (1 atm) of Ipri; to combine the process in Chen, which does not occur in a steam ambient, with the process in Ipri, which occurs in a 100% steam ambient; and to combine the process in Chen, where oxidation occurs after crystallization, with the process in Ipri, where oxidation and crystallization are performed simultaneously.

Even assuming motivation could be found, the Official Action has not given any indication that one with ordinary skill in the art at the time of the invention would have

had a reasonable expectation of success when combining Chen, Ipri, Troxell, Wolf I and Wolf II.

The Applicants further contend that even assuming, *arguendo*, that the combination of Chen, Ipri, Troxell, Wolf I and Wolf II is proper, there is a lack of suggestion as to why a skilled artisan would use the proposed modifications to achieve the unobvious advantages first recognized by the Applicants. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

In the present application, it is respectfully submitted that the prior art of record, alone or in combination, does not expressly or impliedly suggest the claimed invention and the Official Action has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) are in order and respectfully requested.

The Official Action asserts that claims 1-105 of the present application conflict with claims 1, 2, 12, 13, 17 and 18 of copending Application No. 09/222,185, and with claims 1 and 6 of copending Application No. 09/615,078. The Official Action also provisionally rejects claims 1-105 under the doctrine of obviousness-type double patenting over claims 1-26 of the '185 application in view of U.S. Patent No. 5,275,851 to Fonash et al., and over claims 1-44 of the '078 application in view of Fonash. In response, the Applicants respectfully request that the assertion of conflicting claims and the double patenting rejections be held in abeyance until an indication of allowable subject matter is made in either the present application or the copending applications. At such time, the Applicants will respond to any remaining conflicts and/or double patenting rejections.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,



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Eric J. Robinson  
Reg. No. 38,285

Robinson Intellectual Property Law Office, P.C.  
PMB 955  
21010 Southbank Street  
Potomac Falls, Virginia 20165  
(571) 434-6789